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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/842,857 | 04/27/2001 | Tae-kyoung Kang | 1568.1014 | 8680 |

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EXAMINER

LEURIG, SHARLENE L

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/842,857

Applicant(s)

KANG, TAE-KYOUNG ✓

Examiner

Sharlene Leurig

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 27 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 3, 8, 11-13, 16-18, 22-25, 27 and 28 is/are allowed.
- 6) ☐ Claim(s) 1, 2, 4-7, 9, 10, 14, 15, 19-21 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 27 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 4, 5 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshida et al. (6,489,722).

Regarding claims 1 and 5 Yoshida disclose a base panel for a plasma display device, comprising a panel member (Figure 1, element 21), address electrodes (A) formed on the panel member in a predetermined pattern, and a partition structure comprising unit partitions (Figure 3B, element 291), discontinuously formed on a dielectric layer formed on the panel member parallel to each other, to partition a discharge space. The unit partitions can be considered discontinuous because there are

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gaps (33) separating them. Each of the unit partitions disclosed has auxiliary partitions extending from both ends (Figure 3B, element 294).

Regarding claim 5, the unit partitions are formed parallel to address electrodes (Figure 1, elements A and 291). Red, green and blue phosphors are coated in the partitioned discharge space (Figure 1, elements R, G and B). Yoshida discloses a second panel (11) coupled to the first panel to form a discharge space between them, the second panel being transparent, as shown in Figure 1. Sustaining electrodes (X and Y) are formed on an inner surface of the second panel and comprise pairs of first and second electrodes (41, 42) disposed at a predetermined angle with respect to the address electrodes. A second dielectric layer (17) is formed on the second panel, covering the sustaining electrodes.

Regarding claims 2 and 5 the base panel further comprises a dielectric layer (Figure 1, element 24) covering the electrodes formed on the panel member.

Regarding claims 4 and 9, the auxiliary partitions of one of the unit partitions do not contact those of an adjacent one of the unit partitions with which it forms a common discharge space. There is a gap formed in between each of the unit partitions (Figure 3B, element 33).

4. Claims 10, 14, 15, 19-21 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Sano et al. (US 2002/0021090 A1).

Regarding claims 10 and 21, Sano discloses a plasma display device comprising a panel member (Figure 6(b), element 21), electrodes (Figure 6(c), element 22) formed on the panel member in a predetermined pattern, a dielectric layer (16) formed over the

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panel member and covering the electrodes, and unit partitions (29) formed on the dielectric layer, pluralities of unit partitions being disposed in rows across the electrodes (Figure 14, element 29). Adjacent pairs of unit partitions in a common row define a unit discharge space extending across a corresponding electrode (Figure 6(c), elements 29 and 22). Adjacent unit partitions do not contact each other.

Regarding claim 14, Figure 6(c) shows the general structural relationship between the barrier layer (29) and the address electrode (22). The centers of the unit discharge spaces of adjacent rows follow along the electrode, as can be seen by the overlap of the discharge space lined by the phosphor layer (28) and the address electrode (22). The centers, while not being exactly aligned, can be interpreted as following the electrode because they chart roughly the same course over the panel, running longitudinally.

Regarding claim 15, the centers of the unit discharge spaces of adjacent rows are at an angle to their respective electrodes, as can be seen in Figure 6(c), where the electrode (22) is slightly offset from the center of the discharge space lined by the phosphor layer (28).

Regarding claims 19 and 21, the phosphor layers (28) are disposed relative to the unit discharge spaces, or alternatively worded, in a corresponding one of the unit discharge spaces (Figure 6(c)).

Regarding claim 20, the phosphor layers are confined to the discharge space defined by the barrier layer (Figure 11, element 29). Since Figure 14, showing the discontinuous and non-contacting barrier layers, shows them to be formed in a delta

configuration as in Figure 11, the only difference being diamond-shaped cells rather than circular cells, the phosphor layers in the embodiment of Figure 14 can be assumed to also be isolated to the discharge spaces.

Regarding claim 21, Sano discloses a front panel (Figure 6(b), element 11) opposite to and connected to the base panel, front electrodes (41) on an inner surface of the front panel at a predetermined angle with respect to the base electrodes, and a front dielectric layer (17) on the front panel covering the front electrodes.

Regarding claim 26, the pluralities of unit partitions of adjacent rows are disposed diagonally as to form deltas (Figure 11).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 4, 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Betsui et al. (5,967,872) (of record) in view of Nanto et al. (5,952,782).

Regarding claims 1 and 5, Betsui discloses a base panel for a plasma display device, comprising a panel member (Figure 3, element 21), address electrodes (A) formed on the panel member in a predetermined pattern, a partition structure comprising unit partitions (29), discontinuously formed on the panel member parallel to each other, to partition a discharge space. The unit partitions can be considered

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discontinuous because there are gaps separating them all along their lengths. Each of the unit partitions, defined by the structure formed by two adjacent barrier walls, has auxiliary partitions extending from both ends, where the auxiliary partitions are defined as the narrow portions of the barrier walls (29) where the adjacent barrier walls come closer together and the unit partition main part is defined as the wide portion of the barrier walls (29) where the adjacent barrier walls move farther apart to form the discharge spaces.

Regarding claim 5, the unit partitions are formed parallel to address electrodes (Figure 3, elements A and 29). Red, green and blue phosphors are coated in the partitioned discharge space (28R, 28G and 28B). Betsui discloses a second panel (11) coupled to the first panel to form a discharge space between them, the second panel being transparent. Sustaining electrodes (X and Y) are formed on an inner surface of the second panel and comprise pairs of first and second electrodes (41, 42) disposed at a predetermined angle with respect to the address electrodes. A second dielectric layer (17) is formed on the second panel, covering the sustaining electrodes.

Regarding claims 4 and 9, the auxiliary partitions of one of the unit partitions do not contact those of an adjacent one.

Betsui lacks a dielectric layer formed over the address electrodes on the back panel.

However, it is well known in the art to provide a dielectric layer over electrodes in a plasma display device.

Nanto teaches a dielectric layer formed over the address electrodes (Figure 2, element 24).

Therefore regarding claims 2 and 5, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Betsui's plasma display with a dielectric layer formed over the address electrodes, since it is well known in the art to provide one.

Betsui lacks a black matrix layer formed between the sustaining electrodes.

It is well known in the art to provide a black matrix on the front panel of a plasma display to enhance the definition between the pixels.

Regarding claim 6, Nanto teaches the formation of a black matrix layer (Figure 2, element 45) in between the pair of first and second electrodes on the front panel of a plasma display in order to increase the contrast of the display (column 7, lines 5-6).

Regarding claim 7, Nanto teaches the formation of a black matrix layer running transversely across the display, so if it were combined with Betsui's display the black matrix running transversely would intersect with the disconnected regions of the unit partitions, which run longitudinally, and the black matrix would therefore be formed over areas corresponding to the disconnected portions of the unit partitions.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yoshida's plasma display with a black matrix formed in between the front electrode pairs in order to improve the contrast of the display.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (6,489,722) in view of Nanto et al. (5,952,782). Yoshida discloses a panel for a

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plasma display device comprising all the limitations discussed above, but lacks a black matrix formed between the sustaining electrodes.

It is well known in the art to provide a black matrix on the front panel of a plasma display to enhance the definition between the pixels.

Regarding claim 6, Nanto teaches the formation of a black matrix layer (Figure 2, element 45) in between the pair of first and second electrodes on the front panel of a plasma display in order to increase the contrast of the display (column 7, lines 5-6).

Regarding claim 7, Nanto teaches the formation of a black matrix layer running transversely across the display, so if it were combined with Yoshida's display the black matrix running transversely would intersect with the disconnected regions of the unit partitions, which run longitudinally, and the black matrix would therefore be formed over areas corresponding to the disconnected portions of the unit partitions.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yoshida's plasma display with a black matrix formed in between the front electrode pairs in order to improve the contrast of the display.

Allowable Subject Matter

8. Claims 3, 8, 11-13, 16-18, 22-25 and 27-28 are allowed. The following is an examiner's statement of reasons for allowance:

The examiner notes that the Prior Art of Record, Yoshida et al. (6,489,722) and Betsui et al. (5,967,872) (of record) disclose a plasma display having a base panel with

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a partition structure of unit partitions formed discontinuously and parallel to each other, and where each unit partition has auxiliary partitions extending from both ends.

Regarding claims 3 and 8 the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claims 3 and 8, and specifically comprising the limitation of the unit partitions being disposed in a delta arrangement.

Sano et al. (US 2002/0021090 A1) discloses a plasma display having a base panel with a partition structure, the unit partitions formed on a dielectric layer in rows, where adjacent pairs of unit partitions define a unit discharge space extending across a corresponding address electrode, and where adjacent unit partitions do not contact each other.

Regarding claims 11-13, 16-18, 22, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claims 11, 13 and 22, and specifically comprising the limitation of the unit partitions further comprising auxiliary partitions extending toward the corresponding electrodes.

Regarding claims 27 and 28, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claims 27 or 28, and specifically comprising the limitations of the front electrodes further comprising projecting electrodes disposed parallel to the base electrodes or sub electrodes disposed parallel to and connected to each other. Sano explicitly teaches using rectangular electrodes with no subcomponents or auxiliary elements in order to obviate problems in the prior art such as excessive power consumption due to discharge being lost in part because of electrodes having these features (column 1-3).

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

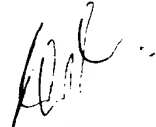
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharlene Leurig whose telephone number is (703)305-4745. The examiner can normally be reached on Monday through Friday, 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703)305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7382 for regular communications and (703)308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Sharlene Leurig
April 30, 2003

SL


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